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AUTHOR Hart, James W.; Stevens, Gwendolyn
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ABSTRACT

Although differing in enrollment, student-teacher ratio, admissions policy, cost, curriculum content, and geographic location of students, the Southeast Missouri State University Library (SEMSU) developed a successful bibliographic instruction program based on Earlham College's Bibliographic Instruction Conference of November 17 and 18, 1977. Designed to enhance students' research skills and to give librarians a more active role in the educational process, the program provided bibliographic instruction for experimental groups from the English, History, Psychology, and Speech Departments; control groups did not receive such instruction. Presentations involved teaching the use of the card catalog and periodical indexes, search strategy, and bibliography, and a tour of the library. Responses to a 45-question evaluation questionnaire indicated that student research skills did improve, with significant differences between experimental and control groups; however, students' attitudes toward librarians and the library did not improve. It was concluded that educational philosophy and administrative policy have a greater influence on the program's success than the characteristics mentioned above. Seven references are listed. (RBF)

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CAN A MISSOURI STATE UNIVERSITY SUCCESSFULLY OPERATE A COURSE-INTEGRATED BIBLIOGRAPHIC INSTRUCTION PROGRAM?

by

James W. Hart
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CAN A MISSOURI STATE UNIVERSITY SUCCESSFULLY OPERATE A COURSE-INTEGRATED BIBLIOGRAPHIC INSTRUCTION PROGRAM?

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Introduction

The significance of the project described in this paper is that Southeast Missouri State University Library has developed a distinctive and successful bibliographic instruction project based on principles learned at Earlham College's Bibliographic Instruction Conference of November 17 and 18, 1977.[1] This conference explained in detail how Earlham's well known course-integrated bibliographic instruction program works. Whereas we initially suspected that the success of Earlham's bibliographic instruction program might be due to the type of students attracted to the college and the learning milieu it provides, this turned out not to be the case.

The differences between the two schools may be inferred by comparing six characteristics of the two institutions: enrollment, student-teacher ratio, admissions policy, cost, curriculum, and the geographic areas from which they draw their students. The 1978-79 Yearbook of Higher Education reports that Earlham's enrollment at that time was 1,044 full time and 14 part time students and Southeast Missouri State's (hereafter referred to as SEMSU) enrollment was 7,086 full time and 1,498 part time students.[2] Although SEMSU cannot be called a large university, it is certainly larger than Earlham to an extent that would contribute to the difference in learning milieu. Earlham's student/faculty ratio was 10.6 to .97, about 10 to 1, whereas SEMSU's was 20.06 to 1, about twice Earlham's ratio. Earlham's small size contributes to the cohesion of the academic community and to student's visibility in that community. SEMSU's

size on the other hand, will necessarily contribute to diversity of the academic community and less visibility for individual students in that community. The difference in student/faculty ratios indicates that classes at Earlham are, on the average, smaller than those at SEMSU. Smaller class size lends itself to greater class participation and more opportunities for discussion between students and faculty. This does not necessarily mean that education at Earlham is more personal than education at SEMSU; for both institutions have relaxed, informal atmospheres that contribute to good relationships between students and faculty. It means rather that education at Earlham is likely to be more individualized than that at SEMSU.

Earlham's admission policy is more selective than that at SEMSU. Earlham's catalog does not indicate a clear standard for acceptance or rejection but implies that, although the academic standards for admission are high, some students who do not meet those standards will be admitted for membership in the Society of Friends, or for their ability to contribute to the diversity of the academic community.[4] "Approximately 70 per cent of [accepted candidates] rank in the top quarter of their high school class."[5] SEMSU's policy is that "Missouri high school graduates...must rank in the upper two-thirds of the graduating class or score above the 33rd percentile on the School and College Ability Test (SCAT) or any other generally-accepted college admissions test.... Out-of-state high school graduates are considered for admission...if they rank in the upper half of their graduating class or score on or above the 50th percentile on any generally-accepted college admissions test."[6] Approximately 60% of SEMSU's 1978 freshman class ranked in the 60th through 99th percentiles of their graduating high school class and one third of that class ranked in the top 20 percentiles of their high school graduating class.[7] Although percent and percentiles are not precisely comparable, this comparison should illustrate at least roughly that Earlham's policy results in a slightly better academi-

cally prepared student body.

The fourth difference between Earlham and SEMSU is the cost. In the 1979-80 academic year it cost a student living in a dormitory $6,100 to attend Earlham. This fee paid for room, meals, tuition and incidental fees.[8] The same year it cost an undergraduate student who was a Missouri resident living in a dormitory $1,315 to attend SEMSU.[9] This fee includes incidental fees, room and meals. Financial aid helps to reduce the difference between the costs of attending these two schools. In 1978 approximately 50% of Earlham's entering freshmen and 31% of SEMSU's freshmen received financial aid. All of Earlham's freshmen receiving financial aid and almost 90% of SEMSU's freshmen receiving financial aid received full support.[10] This is not enough, however, to alter the conclusion that Earlham's students, on the average, come from families whose economic status is substantially higher than the economic status of SEMSU's students' families. Earlham's high cost would tend to restrict its student body to those from a smaller socioeconomic group, and thereby contribute to the cohesiveness of its student body. SEMSU's low cost tends to contribute to its diversity by making it possible for students from a wider socioeconomic group to attend.

The next point of comparison is the curriculum or intellectual orientation. Does the curriculum emphasize the traditional liberal arts rather than education for careers? Does the curriculum prepare students for graduate school or for business and the professions? Certainly this is a matter of degree and both Earlham and SEMSU send students on to further education and out into the world of work. Nevertheless, it seems that an examination of the course descriptions in the catalogs of both schools shows that Earlham tends to emphasize the traditional liberal arts whereas SEMSU balances the two just about equally. An Earlham student who wishes to prepare for a career in business must major in economics and select courses such as "Principles of Political Economy,"

"Financial Accounting" and "Management Economics."[11] A SEMSU student may major in management, marketing, accounting, finance, real estate or computer science and take courses that are directly related to his career choice or may major in English preparation for graduate work.

The two institutions attract students from different geographic areas. Earlham has no particular service area or geographical constituency. It is very probable, although we have not found any documentation to support this proposition, that Earlham draws its students from the entire country. As a Missouri state university SEMSU has a service area in the southeast region of the state including St. Louis and in 1978 it drew 92% of its students from within the state.[12] This difference crosses the socioeconomic range and gives Earlham a different kind of diversity from that at SEMSU.

Let us summarize the differences between the two schools. Earlham's learning milieu is characterized by a small college community, small classes, greater visibility for individual students, and a traditional liberal arts curriculum. SEMSU's learning milieu is characterized by a significantly larger university community than Earlham's, larger classes, less visibility for individual students, and a curriculum that is balanced between the liberal arts and education for career preparation. Earlham's student body is slightly better academically prepared upon matriculation, comes from a narrower and higher socioeconomic range, is likely interested in a traditional liberal arts education, and comes from a broader geographical area. SEMSU's student body is not quite so well academically prepared as Earlham's is upon matriculation, comes from a broader socioeconomic range and narrower geographic area, and is slightly more interested in career preparation than Earlham's student body.

These differences notwithstanding, the two institutions share one quality that has proved to be a sine qua non of a successful course-integrated bibliographic instruction project: the librarians have an excellent rapport with

the classroom faculty. The senior librarians here have close personal associations with classroom faculty members going back many years. Even before winning faculty status in 1976, they served on some university committees. Since 1976 librarians at SEMSU have served on Faculty Senate committees such as the Committee on Committees, the Faculty Status Committee, the Promotion and Tenure Committee; and in 1980 the Library won a permanent place on the Committee on Committees. Librarians at SEMSU have also chaired such committees as the Grants and Research Funding Committee, the Salary Committee, and the Faculty Welfare Committee. Since 1976 all librarians recommended by the Library to the University Faculty Promotions Committee have been promoted. Clearly librarians here have faculty status not only in name but in fact. I shall now proceed to describe SEMSU's program, which, as I have said, is patterned after Earlham's.

The Development of the Project

This project was begun in the fall of 1977 when William J. Petrek, Vice President for Academic Services, sent a reference librarian, a professor in the Speech Communication Department, and a professor in the History Department to a Bibliographic Instruction Conference at Earlham College. After the conference, Dr. Petrek called a series of meetings of the Dean of the College of Humanities, the Dean of the College of Social Sciences, the Director of the Library, and the university's representatives to the conference. The result of those meetings was a proposal for a College Library Program Grant which was submitted to the National Endowment for the Humanities in April 1978. Although the grant was not obtained, Dr. Petrek was able to fund the project at a lower level than described in the proposal.

The Model

SEMSU's project was based on a model that set goals and specified a core of information to be taught, a teaching strategy, and a method of evaluation. Beyond those limits, however, the project was flexible. Indeed, the two librarians who taught in the project used differenct techniques, examples and handouts to teach the same core of ideas and information. The model was designed to give the project both the ability to adapt to changing conditions and needs and a well-organized framework which could be objectively evaluated.

The Goals

The project had two general, long-range goals, the first of which was served by two short-range specific objectives. The first goal, both in order and importance, was to enhance students' research skills. This would be accomplished by fulfillment of two objectives: to improve students' library use skills and to improve students' attutudes toward the library and librarians. Both of these objectives were measured by an evaluation instrument designed specifically for this project. The second goal was to give librarians a more active role in the educational process. This would be accomplished merely by the operation of the project.

Relations with Classroom Faculty

At the beginning of each semester the project librarians contacted the History, Speech, and English departments to determine which classroom faculty would be involved in the project. The quickest and most effective method was to contact one professor in the department who would in turn contact colleagues. The most important criterion for selecting a contact person in a department was prior acquaintance with bibliographic instruction or enthusiasm for the library. Two very effective contacts in this project were Gene Ramsey in History and Jim Scanlon in English. History and English have always been very enthusiastic about this project.

The Psychology Department was not originally involved in this project. Prior to the beginning of the spring 1980 semester all of the psychology faculty members were contacted and their participation in this project was solicited. The response from this department was overwhelming; after contacting only three faculty the project had all the psychology classes it could accommodate. It was clear from this that there are pockets of latent interest among the faculty that the Library could cultivate if it had the resources.

Library faculty stayed in close touch with classroom faculty throughout the semester. The contact person in each department (except Psychology) canvassed all classroom faculty in his department to determine whether or not they would participate in the project. Canvassing fall semester was done at the beginning of that semester and canvassing for the spring semester was done at the end of the fall semester. Each classroom teacher who volunteered to participate was then contacted either by phone or in person by the librarian who was going to do the instruction for his class. The librarian then met each classroom faculty member three or four more times during the semester. They would at least meet for the pre-test and two sessions of instruction. If three sessions of instructions were given, they met four times. In a few cases librarians had to contact classroom faculty more than once to complete the arrangements for instruction. Now this does not sound like a great deal of contact. Yet if one considers that it is unusual for a classroom faculty member to call librarians at all to notify them that he has made an assignment which will require the use of the library, it is obvious that the project librarians were very fortunate indeed to have as much contact with classroom faculty as they did.

The Courses

The courses involved in this project were "English Composition II," "American History II," "Fundamentals of Speech" and several upper and lower division psychology courses. The "English Composition II" courses may be traditional English composition or may concentrate on subjects such as "Sports and Society," "Women and Society," and "Human Motivation." Although every classroom teacher has an individual approach, most assign one short (three to five pages) and one long paper (seven to ten pages). "American History II" is a required course. Those sections which participated in the bibliographic instruction project were assigned one seven to ten page paper. "Fundamentals of Speech" is a one semester elective in which all sections follow the same format. Students give several speeches of different types. Those students need a particular type of rather superficial information. These courses were chosen because they enroll freshmen who have had little exposure to Kent Library and require library research for papers or speeches. The psychology courses included "General Psychology," the introductory course, "Psychology and the Law," "Introduction to Perception," "Educational Psychology," and "Motivation and Emotion." All of these courses required either a library research project or a paper. Most of the classes used in this project were limited to approximately 25 students each (except for "General Psychology"). All classes were evaluated in the same manner.

For nearly every experimental group that received the instruction in these various classes, there was a control group which received no instruction or instruction given by the classroom faculty member.[13] Both groups were tested and the results helped evaluate the project. In the first semester 550 students in eight classes served as the experimental groups and in the second semester 262 students in 14 sections served as the experimental group. The control groups for each semester contained 283 students in six classes during the first semester and 425 students in ten sections during the second semester. While

these groups were quite large, the data presented reflects a total number of 746 students (267 for the first semester and 479 for the second semester) due to incomplete data or general college attrition.

The Instruction

The class sessions consisted of three different types of presentations that could be given in any order. The information to be presented in each type was standardized. Two of these sessions were required; the other was at the discretion of the classroom faculty.

The first type taught the use of the card catalog and the periodical indexes. This session took place in the library and lasted fifty minutes. Included in this session was the tripartite division of the card catalog, alphabetical order in the card catalog, how to identify the elements of a catalog card, the use of the Library of Congress List of Subject Headings, how to identify the elements of a periodical citation and the difference between a periodical index and an abstracting service. The two librarians involved in the project used different methods to teach this material. One used signs and worksheets to illustrate the lecture and give students immediate, on the spot practice and feedback. The card catalog worksheet, for example, directed a student to a certain drawer and card, and posed questions about that card, such as who is the author, what is the call number, etc. Students filled the worksheets out directly after the lecture for that subject. The worksheets were not graded; their purpose was to stimulate questions that would not otherwise have been asked, give the librarian direct feedback about the presentation, and give the students practice. These three goals were all accomplished. It is interesting to note that nearly all students asked questions about periodical indexes.[14] The other librarian used handouts to illustrate the lectures and taught newspaper indexes in addition to the other material.

The second type of session covered search strategy and bibliography. This was a fifty munute lecture and discussion given in the classroom. It covered the following to_ics:

(a) bibliographies

(b) where students can find biblio raphies

(c) how students should carry on research in the library

(d) a sample search strategy

Four general principles were emphasized throughout the lecture: (1) begin with introductory sources such as encyclopedias, (2) use bibliographies before using the card catalog (if possible), (3) use selective bibliographies before using comprehensive bibliographies, and (4) every library search should be treated differently from every other search. An annotated bibliography of reference works on the subject at hand was passed out to the students at this session. Although this lecture began as a mere carbon copy of one of Evan Farber's lectures, it developed more rapidly than any other aspect of the project. At the beginning of the project, the material on bibliographies was presented before the search strategy. This material by itself, however, seemed to bore the students. By the end of the project the sample search strategy was given first and the other information was worked into the ensuing discussion. In the beginning mimeograph copies of the search strategy were handed out and it was discussed without any accompanying illustrations. Students found it too difficult to follow the discussion by this method and by the middle of the second semester all the search strategies were given by transparency and overhead projector. The sample search strategies clearly elicited more voluntary student response than any of the other two segments of the project because students could relate them most directly to their assignment.

The most successful presentation of all was for "The Jazz Age," a section of "English Composition II." The entire presentation was a sample search

strategy on Al Capone. It opened with a very bloody passage from Bloodletters and Badmen.[15] This captured students' attention better than any other aspect of the project. The explanation of the search was interspersed with anecdotes about Capone's life. As much attention was given to the entertaining aspects of this presentation as to the educational. Indeed, the students applauded at the end of one of these. Yet it elicited more questions from students about research techniques than any other presentation, which indicated that enhancing the entertainment value of the presentation enhanced the educational value at the same time.

The optional meeting consisted of a twenty-minute tour of the library which included the card catalog, the reference collection, the indexes to government documents, reference desk hours, the function of a reference librarian, the indexes and abstracts to periodical literature and the location of periodicals. During this session the librarians merely pointed out locations and gave simple explanations. If this session was included, it occurred before the first session. If it was omitted, the first session included a short tour of the reference collection, the indexes to government documents, the indexes to periodical literature, and information on locating periodical articles. During the first semester, the classroom teachers in History requested that their students not receive the tour at all. At the end of that semester one of the most common responses on the post-test indicated that the students had wanted a tour. When, during the second semester, one history teacher let his class vote on whether or not to have a tour, a majority of the students voted for the tour.

In addition to these three types of sessions the History faculty requested that a librarian meet students individually, read their preliminary bibliographies, and make recommendations to help improve them. This was done after the librarian had spoken to the class but before the papers were due. No grades were given; students were merely informed of how to improve their research.

These sessions lasted approximately 20 minutes and, while helping the student on a specific problem, also provided an opportunity to repeat the most important points of the classroom lecture and provided direct feedback on how well the students were mastering and applying what was taught in the other sessions.

The Operation of the Project

The first task each semester was to contact the faculty liaisons in each participating department to find out which classes and which teachers would participate that semester. During the first semester faculty liaisons were contacted during the first week of classes for that semester and at the end of the first semester they were contacted for the second semester. Faculty liaisons had to be contacted during the first week of the fall semester as opposed to the end of the previous spring semester because many of them did not have their fall schedules completed until summer.

Once the librarians had a list of all the classes and teachers who would participate in a given semester, they (the librarians) divided the classes up between them. Next the librarians telephoned or interviewed personally all the classroom teachers whose classes he or she had taken. During these conversations the librarian described the project in detail, and asked the classroom teacher when he would like to have the pre-test and the instruction, what the content of the course was and what subject might be used in the search strategy lecture.

The next task was to prepare for the class. The instructional materials and lectures for the history and speech classes had been created before the project began whereas the materials and lectures for the English and psychology classes had to be created while the project was in operation. As copies of previously prepared material ran out, new copies had to be made. An annotated bibliography of reference works, an outline of the sample search strategy and

a lecture were prepared for each search strategy lecture. In addition to this one of the project librarians prepared her own handouts for teaching the use of the card catalog, the Library of Congress List of Subject Headings and newspaper indexes. The other librarian prepared worksheets for teaching the use of the card catalog and periodical indexes which has been previously explained in the section on instruction. Preparation for the classes and the pre-test had to be done between the time the classroom faculty were contacted and the instruction itself.

After the instruction, the librarians contacted the classroom faculty to set a date for the administration of the post-tests. The entire process of arranging for and giving the post-tests was one of the most difficult of the entire project. By that time it was usually the second half of the semester and everyone was tired. Although no one said so, it was obvious that the instruction was of major importance and as the semester wore on the post-test appeared less and less important to everyone involved. In retrospect it seems that the form of evaluation used in this project was too much of a burden for such a small project. Although it allows for very detailed, precise and objective judgements to be made, the benefits of the pre-test/post-test form of evaluation are not great enough to justify the time and trouble it caused.

The only restriction on classroom teachers was that the content of the instruction and the sequence, pre-test/instruction/post-test, had to be adhered to by all participating classes. In all other respects classroom teachers were given as much freedom as possible. The librarians made no restrictions on when they would do the instruction.

Evaluation

Only the first goal needed to be evaluated; the second goal, to give librarians a more active role in the educational process, was achieved merely

by the operation of the project. Goal one, to enhance students' research skills, was divided into two objectives: (a) to improve students' library use skills and (b) to improve their attitudes toward the library and librarians. This goal's two objectives were measured using a locally produced 45 question evaluation instrument designed specifically for this project and results indicated that the first objective was attained, but the second was not.[16]

The first section of the evaluation instrument consisted of 30 multiple choice questions based on the information taught in the project. The reliabilities of the instrument ranged from .66 with a standard error of 1.93 for the fall semester experimental subjects' pre-test to .82 with a standard error of 1.92 for the same group's post-test as measured by Kudder-Richardson reliabilities. The reliabilities of the other groups' tests were all clustered around .77. The second section contained 15 statements on students' attitudes toward the library presented in a Likert-type format (1=agree, 5=disagree). The reliabilities of this section were also fairly high ranging from .67 to .76. Since attitudes did not seem to change appreciably from pre-test to post-test for any group, the project was clearly unable to change attitudes. This fact leads directly to the conclusions that instruction librarians' time is better spent attempting to teach skills than attempting to change attitudes and that we do not know what variables contribute to students' attitudes toward Kent Library.

The pre-test instrument was administered to all groups during the first two weeks of classes (before any bibliographic instruction) and the post-test was administered during the closing weeks of the semester (after the bibliographic instruction had been given to the experimental groups). Not all pre-tests and not all post-tests were given at one time. They were given at the individual classroom teacher's convenience. The library faculty administered the pre-tests to the experimental groups, but not to the control groups; the classroom faculty

administered the post-test to both experimental and control groups.[17] Students who had formerly been exposed to our instruction were asked not to take the pre- and post-tests in a second experimental group class. In any case in which there was more than one set of data (a set of data being a set of responses for one pre-test and one post-test) for any given student, only the first set of data was used. Thus, although some students participated in the project several times, there was at most one complete set of data per student. Table 1 reflects the research design.

Table 1

	Beginning of Semester		End of Semester
Experimental group	Pre-test	Instruction	Post-test
Control group	Pre-test	No Instruction	Post-test

The data from the evaluation questionnaire (for all classes collapsed for librarians) was analyzed in the following ways: (1) an analysis of variance for repeated measures, ANOVA-R, was utilized in the analysis of the pre-post test data for both skills and attitudes (a prior evaluation of the pre-test data revealed that the hypothesis of equality between groups could not be rejected); and (2) an item analysis of both the skills and attitudes statements. The dependent variable in the analysis was the skills acquisition or attitudes toward the library as measured by the questionnaire discussed above. The independent variables included (1) the experimental-control group dimension, (2) the pre-post test dimension and (3) the interaction of these two variables.

For the first semester the ANOVA-R revealed a main effect for the variable of pre-post ($F=39.44$, df 1/280, $p<.0001$) and experimental-control ($F=16.76$, df 1/240, $p<.0001$) but there was no interaction effect beyond chance expectation. The students did increase in skills acquisition both over time and due to the Bibliographic Instruction Project.

For the second semester the ANOVA-R revealed main effects for the variable of pre-post (F=43.24, df 1/462, $p < .0001$), and experimental-control (F=9.45, df 2/488, $p < .0001$). The interaction of pre-post and experimental-control also differed beyond chance (F=10.80, df 1/462, $p < .01$). When an interactional effect is statistically beyond chance expectation the main effects are uninterpretable. Therefore, we shall focus on the interaction.

The interactional results indicate that there was a significant difference in skills' acquisition over time that was clearly dependent on group membership. Figure 2 displays the results for both the first and second semester.

The evaluation instrument was also used to help determine which segments of the program were most effective. An item analysis indicated the areas in which the students' responses on the evaluation instrument improved over the course of the semester and the areas in which they did not improve. The objective information from the item analysis generally corroborated the observations of the instruction librarians.

In the fall semester there was marked improvement in eleven questions (8,9,10,21,22,24,25,26,27,29,30) but in the spring improvement occurred in only seven (1,21,22,24,27,29,30). (See appendix for full questionnaire) Those questions whose responses improved the fall semester concerned the difference between word-by-word and letter-by-letter alphabetizing in the catalog, the definition of bibliography, search strategy and the use of periodical indexes. Those questions whose responses improved in the spring semester concerned the identification of the call number on a sample catalog card, the definition of bibliography, search strategy, and the use of periodical indexes. For both semesters the greatest amount of improvement occurred in the same areas. The instruction librarians expected the improvements to come in these areas, but since they were more confident and familiar with the program the second semester, they expected that their teaching would be more effective and consequently

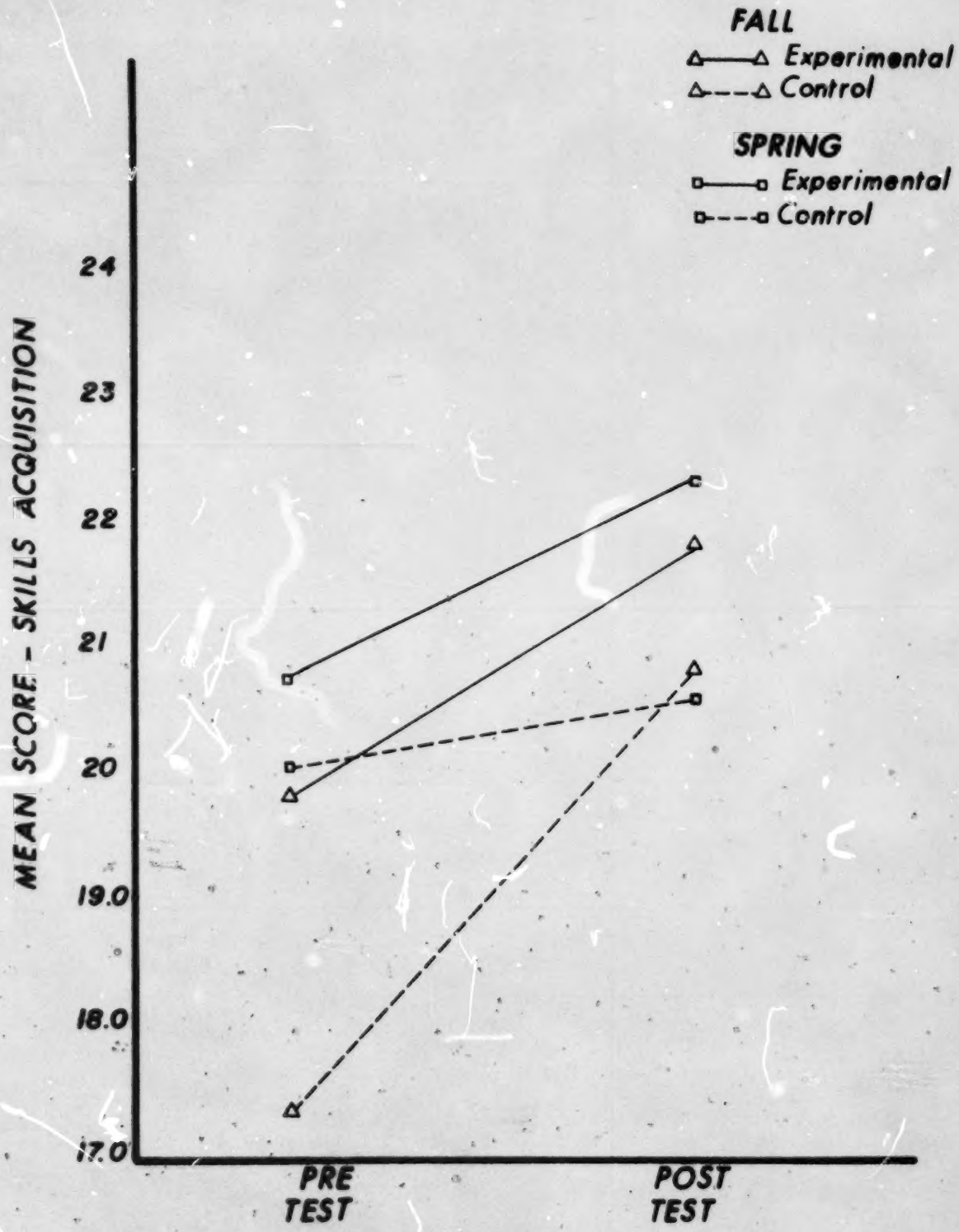
FALL
Experimental
Control
SPRING
Experimental
Control
MEAN SCORE - SKILLS ACQUISITION
24
23
22
21
20
19.0
18.0
17.0
PRE TEST
POST TEST

FIGURE 2

scores would improve more during the second semester than during the first. There is no apparent reason for this lack of improvement from one semester to the next.

In the first semester there were seven questions (2,3,5,12,15,17,23) shared by both groups which 90% or better of the subjects answered correctly and two questions (4,18) for which 90% of the experimental group and 85% or better of the control group answered correctly. Questions 2,3,4 and 5 ask students to identify the author, title, date of publication and bibliography note from a sample catalog card, 12 and 15 ask students to identify periodical volume number and author from a sample Readers' Guide citation, 17 and 18 ask students to identify the subject heading and date of the article from a New York Times Index citation, and 23 asks students what the best way to search for periodical articles is. The scores on these questions did not improve appreciably from pre-to post test situation. This verifies that most students already have at least an instinctual grasp of some of the basics of reading a catalog card, periodical index citation and newspaper index citation.

The scores on one question did improve appreciably from pre- to post-test situation. This was question number 4, which asked students to identify the date of publication from a sample catalog card. There was a ten percent increase of respondents answering this question correctly at the end of the first semester.

In the spring ten questions (2,3,4,5,11,12,15,17,18,23) were answered correctly in both the experimental and control group by 90% of the students or better. Two other questions (6,13) were answered correctly by 90% or better of the subjects in the experimental group and by 85% or better in the control group. All but three of these questions (6,11,13) were also answered correctly in the first semester by 90% or better of the experimental and 85% or better of the control group. Qestion 6 asked students to identify in which side of Kent Library's divided catalog a sample card would be filed. Question 11 and 13

asked students to identify the title of a periodical article and the volume number of the periodical from a sample Readers' Guide citiation. This reinforces the conclusion stated earlier that most of SEMSU's students have at least an instinctual grasp of some of the basics of reading catalog cards, periodical citations and newspaper index citations.

On the other hand, only a small percentage of students knew the answers to questions 7,8,9 and 10 and the number of students who could answer them correctly did not increase during the semester. This is true only of question 7 during the first semester, but of all four questions the second semester. Questions 7,8,9 and 10 asked students to arrange two words and two phrases in correct alphabetical order, which requires a knowledge of the difference between word-by-word and letter-by-letter alphabetizing.

Although the statistical analyses revealed a significant increase of skills' acquisition for the experimental group for some questions, the percentage of students in the control group who were able to improve their performance on some questions on the post-test also increased. This was because in some control group classes the assignments required students to learn these skills on their own or by asking a reference librarian and because some control group professors gave their classes their own brand of library instruction. Thus, the students in the project acquired more skills in library use than did those in the control group even though some classes in the control group received instruction from their professors.

Conclusion

In summary the project was successful at teaching the skills it purported to teach, but was not able to affect students' attitudes toward the librarians or the library. The project strengthened the instructional ties between the project librarians and the participating classroom faculty. It gave the partic-

ipating librarians a more active role in the educational process insofar as they took part in it.

The answer to the question posed in the title of this paper (can a Missouri state university successfully operate a course-integrated bibliographic instruction program) is yes. We did it at SEMSU. The fact that we did it is the basis for the further conclusion that the most important variable in the success of a program of this sort are relations between classroom and library faculty, the support of the librarians, and the support of the library and university administrations. We attained the moderate success that we had because our program was initiated by the Vice President, operated by the librarians and sustained by the excellent relationship between library and classroom faculty. In other words, the political situation is the most important determinant of the success of a course-integrated bibliographic instruction program. It is the same factor that has made Earlham's and SEMSU's programs successful. The size of the school, the degree of individualized instruction, the academic preparation of freshmen, the economic status of students, students' intellectual orientation and other similar factors have much less influence on such a program than the educational philosophy and administrative policy that animate an institution. It seems very probable that other similar programs could be successfully instituted in other types of institutions of higher education, if the people in those institutions want them.

References

1. For full descriptions of Earlham's program see: Evan Ira Farber, "Library Instruction Throughout the Curriculum: Earlham College Program," in John Lubans, Jr., Educating the Library User (New York: Bowker, 1974) pp. 145-62; and James R. Kennedy, Jr., Thomas G. Kirk, and Gwendolyn Weaver, "Course-Related Library Instruction: A Case Study of the English and Biology Departments at Earlham College," Drexel Library Quarterly 7 (1971): 277-97.

2. Yearbook of Higher Education, 10th ed. (Chicago: Marquis Academic Media, 1978) p. 152 and p. 277.

3. Earlham's ratio was computed by the authors using data from the reference cited in the preceding footnote. SEMSU's ratio was provided by SEMSU's Office of Institutional Research.

4. Earlham College, Catalog 1979-80 (Richmond, Indiana: Earlham College, n. d.) p. 14.

5. Ibid., p. 14.

6. Southeast Missouri State University, Bulletin 1979-80, vol. 106 no. 1 (Cape Girardeau, Missouri: Southeast Missouri State University, 1979) pp. 13-14.

7. This information was provided by SEMSU's Office of Institutional Research.

8. Earlham, Catalog, p. 17.

9. SEMSU, Bulletin, p. 15 and p. 50.

10. These figures were calculated by the authors using data from the following work: Maureen Matheson, ed., The College Handbook, 17th ed. (New York: The College Board, 1979) p. 421 and p. 814.

11. Earlham, Catalog, p. 59.

12. Matheson, p. 814.

13. The bibliographic instruction project had no control over which teachers in the control groups provided instruction to their classes.

14. By far the most frequently misunderstood point about the card catalog, and this is after myriad explanations, was that the call number consists of more than just the first line.

15. Jay Robert Nash, Bloodletters and Badmen: A Narrative Encyclopedia of American Criminals from the Pilgrims to the Present (New York: M. Evans, 1973) pp. 97-98.

16. Psychometric information on the evaluation instrument can be obtained from the authors.

17. There is only one instrument given before and after the instruction was given to the experimental group. When the word pre-test is used in this paper it refers to this instrument when given before the instruction and when the word post-test is used it refers to the same intrument given after the instruction.

18. Librarians were already represented on the Academic Council and the Faculty Senate General Education Committee.